



**PREMIER SENSOR  
ORDERING  
INFORMATION**

**TDS0052**



The following selection must be made in order to correctly specify the build and configuration of the sensor

Basic part code	Hydrocarbon or Carbon dioxide	Certified or Non-Certified	3 pins or 5 pins	Bridge or Voltage output	Positive or Negative configuration	Optional filter
<b>MSH-P/</b>	<b>HC or CO2</b>	<b>Blank or NC</b>	<b>3 or 5</b>	<b>B or V</b>	<b>P or N</b>	<b>Blank or F</b>

Example: 

<b>MSH-P/</b>	<b>CO2</b>	<b>NC</b>	<b>5</b>	<b>V</b>	<b>P</b>
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In addition to the ordering code, the gas type and range must be specified along with the required output voltage.

For example: **MSH-P/CO2/5/V/P 0-5% volume CO2 = 0.4 – 2.4V**  
**MSH-P/HC/3/B/N 0-5% volume methane = 100mV rising**

Determining the correct ordering information can be broken down into 2 stages:

- a) **Stage 1: Specify the part code.**
- b) **Stage 2: Specify the target gas and the output specification.**



**Dynamment Limited**

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## Stage 1: Specify the ordering code.

### STEP 1

Choose either hydrocarbon or carbon dioxide: **HC or CO2**

<b>MSH-P/</b>	<b>CO2</b>				
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### STEP 2

Choose either certified or non-certified: **Blank or NC**

Certified sensors must be chosen for use in potentially flammable atmospheres. Non-certified sensors require additional protection when used in potentially flammable atmospheres.

<b>MSH-P/</b>	<b>CO2</b>	<b>NC</b>			
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### STEP 3

Choose either 3,4 or 5 pins: **3, 4 or 5**

Select 3 pins sensors when replacing pellistors in an existing design. Use 4 or 5 pins sensors for new designs and when using the data communications facility.

<b>MSH-P/</b>	<b>CO2</b>	<b>NC</b>	<b>5</b>		
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### STEP 4

Choose either Bridge or Voltage output: **B or V**

Select Bridge output sensors when replacing pellistors in an existing design. Use Voltage output sensors for new designs.

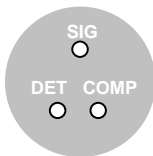
<b>MSH-P/</b>	<b>CO2</b>	<b>NC</b>	<b>5</b>	<b>B</b>	
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### STEP 5

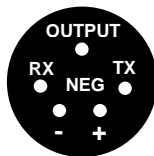
Choose either Positive or Negative version: **P or N**

Select the version that is compatible with existing designs, or the most convenient for new designs. Refer to the diagram below for more information.

<b>MSH-P/</b>	<b>CO2</b>	<b>NC</b>	<b>5</b>	<b>B</b>	<b>N</b>
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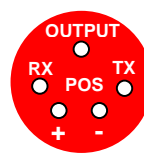


Typical Pellistor Pinout



Premier Negative Polarity Option

Use where the DET pin of the existing pellistor is connected to the Negative of the pellistor bridge supply.



Premier Positive Polarity Option

Use where DET pin of the existing pellistor is connected to the Positive of the pellistor bridge supply.

Note – the RX and TX connections are pads on the 3 pin versions of the sensor.



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## Stage 2: Specify the target gas and range.

For Hydrocarbon sensors, choose from the following list:

PREMIER HYDROCARBON SENSORS		
GAS TYPE	SENSOR RANGE	COMMENTS
METHANE	0 – 5% volume	Fully characterised for methane. Linear factor available for toluene (0 – 1.1% vol.) and acetic acid (0 – 4% vol.) no span temperature compensation
METHANE	0 – 100% volume	Fully characterised for methane
PROPANE	0 – 2% volume	Fully characterised for propane. Linear factor available for isopropanol (0 – 2% vol.) and methanol (0 – 5.5% vol.) no span temperature compensation
PROPYLENE	0 – 2% volume	Fully characterised for propylene
BUTANE	0 – 5% volume	Sensor output linearised for butane, no span temperature compensation
PENTANE	0 – 2% volume	Sensor output linearised for pentane, no span temperature compensation
HEXANE	0 – 3% volume	Sensor output linearised for hexane, no span temperature compensation
ETHYLENE	0 – 3% volume	Sensor output linearised for ethylene, no span temperature compensation
ETHYLENE OXIDE	0 – 3% volume	Fully characterised for ethylene oxide
ETHANOL	0 – 5% volume	Sensor output linearised for ethanol, no span temperature compensation
METHYL BROMIDE	0 – 25,000 ppm	Sensor output linearised for methyl bromide, no span temperature compensation

For Carbon Dioxide sensors, choose from the following list:

PREMIER CARBON DIOXIDE SENSORS		
GAS TYPE	SENSOR RANGE	COMMENTS
CARBON DIOXIDE	0 – 500 ppm	10 ppm resolution
CARBON DIOXIDE	0 – 1000 ppm	20 ppm resolution
CARBON DIOXIDE	0 – 2000 ppm	50 ppm resolution
CARBON DIOXIDE	0 – 5000 ppm	50 ppm resolution
CARBON DIOXIDE	0 – 10,000 ppm	100 ppm resolution
CARBON DIOXIDE	0 – 2% volume	250 ppm resolution
CARBON DIOXIDE	0 – 5% volume	250 ppm resolution



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## Specify the output voltage:

### a) Bridge output sensors

The output voltage for a “Bridge” type sensor has a default setting of half the supply voltage for “zero gas”. The output is designed to act in the same way as pellistors, for this reason the output of a POSITIVE sensor will fall when gas is detected. The output of a NEGATIVE sensor will rise when gas is detected. These are the default settings, if required; the user can specify the opposite direction. Similarly, if an output voltage for “zero gas”, other than half the supply voltage, is required this can be specified when ordering.

Pellistor outputs usually vary from 100-200mV for 5% volume methane. An example of a typical pellistor-replacement sensor would therefore be specified as follows:

**MSH-P/HC/3/B/N 0-5% volume methane = 100mV rising**

**The output voltage is dependent upon the sensor supply voltage.** The factory default supply voltage used is 3.1V. If a different supply voltage is to be used, this should be specified when ordering so that the output voltage can be set accordingly. For example:

**MSH-P/HC/3/B/N 0-5% volume methane = 100mV rising, power supply = 3.3V**

### a) Voltage output sensors

The output voltage for a “Voltage” type sensor can be specified when ordering with limits of 0V to 2.8V. A typical setting would be:

**MSH-P/HC/3/V/N 0-5% volume methane = 0.4V – 2.4V**

**Avoid choosing 0V for “Zero” gas because the fault output condition of -100% FSD cannot be detected if the output is already at zero.**



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